

Sinske HATTORI*: **A remarkable *Balantiopsis* found in tropical Asia**.**

服部新佐: 熱帯アジアに発見された注目すべき *Balantiopsis*

The genus *Balantiopsis* is a neotropic—antarctic element. Fifteen species have been described from South America (including Juan Fernandez I. and Desolation I.), 9 species from New Zealand, 8 species from Australia, 3 species from New Caledonia, and one species each from Kerguelen Is. and the Philippines. Most of these species are little known and the genus is in need of critical revision. Hodgson (1958) recognized only 4 species in New Zealand.

In tropical Asia, a single species, *Balantiopsis philippinensis* Inoue has been known only from Negros I. (Philippines). Stephani (1910) identified this plant with the Chilean *Balantiopsis angustifolia*, but Inoue (1965) found it to be different, and described it under the above-mentioned new name.

In the following I wish to propose as another new species a *Balantiopsis* found in Borneo, the Philippines and New Guinea. This species is unique with its leaf completely bilobed to the base, whereas all the other known taxa have leaf-carinas. Basing on this peculiarity of the new species, I wish to propose a new subgenus, *Schizophyllon* (which means completely bilobed leaves).

Balantiopsis subgen. **Schizophyllon** Hatt. subg. nov.

Folia ad basem biloba (carina conjunctionis nulla). Type: *Balantiopsis ciliaris* Hatt.

Balantiopsis (subg. *Schizophyllon*) **ciliaris** Hatt. sp. nov. (Fig. 1).

Planta caespitosa, pallide virens vel pallida, apice saepe purpurata. Caulis carnosus, strictus, pallide olivaceus, saepe purpureo-tinctus, 2-4 cm longus, 0.3-0.35 mm in diametro, cum foliis 2-3 mm latus, subsimplex, ramis intercalaribus, posticis, raro ex axilla interna foliorum (lobis posticis); rhizoidea rarius visa, longa, ex basi amphigastriorum, subfasciculata, saepe purpurata. Folia caulina plano-disticha, imbricata vel contigua, ad basem bifida: lobus anticus caule subparallelus (sub angulo 20-30°), transverse insertus, oblongo-ovatus, 0.8—0.9 mm longus, 0.5—0.6 mm latus, apice inciso-bispinoso, margine ca. 10-spinoso, spinis

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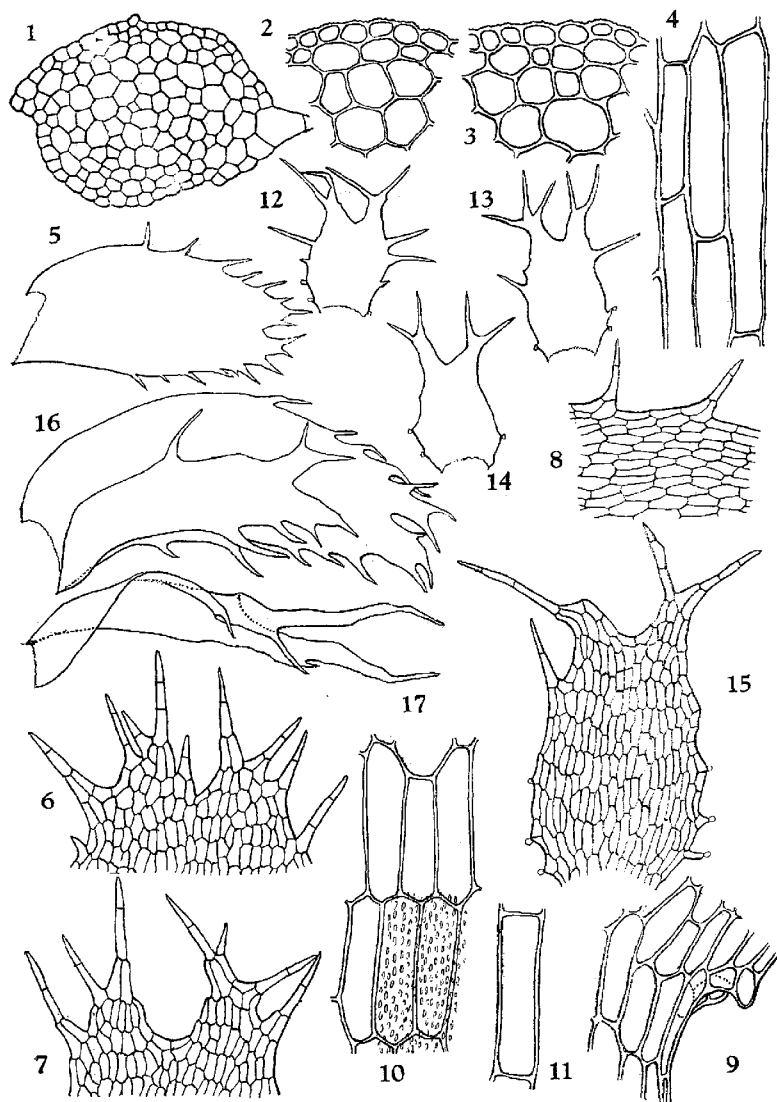


Fig. 1. *Balantiopsis ciliaris* Hatt. 1. Cross-section of stem, $\times 90$. 2,3. Parts of stem cross section, $\times 190$. 4. Epidermal cells of stem, $\times 215$. 5. Postical leaf-lobe, $\times 20$. 6. Apex of postical leaf-lobe, $\times 55$. 7. Apex of antical leaf-lobe, $\times 55$. 8. Postical margin of postical leaf-lobe, $\times 55$. 9. Leaf-base showing "carinal cell" uniting the antical and the postical leaf-lobes, $\times 135$. 10. Median cells of postical leaf-lobe, showing verrucose cuticle, $\times 215$. 11. Longitudinal section of leaf-cell, $\times 215$. 12-14. Underleaves, $\times 20$. 15. Do., $\times 45$. 16. Female bract, dorsal view, $\times 20$. 17. Female bracteole, $\times 20$. Drawn from the type.

longis, 2—4 cellulis uniseriatis compositis, cellula $80-100 \times 20 \mu$; lobus posticus oblique patulus (sub angulo $45-60^\circ$), caule longitudinaliter insertus, oblongus, 1.6—1.9 mm longus, 0.7—0.8 mm latus, lobo antico triplo major, apice incisobifido, spinoso, margine similiter armato, spinis 16—20 in toto; carina conjunctionis nulla. Cellulae foliorum subhyalinae, anguste rectangulares, fere aequales, in series transversas distinctas distributae, (60) $70-100$ (120) μ longae, $20-25 \mu$ latae, ipsae apicales breviores, ipsae interiores parum majores ($80-150 \times 20-30 \mu$), parietibus hyalinis, tenuibus, trigonis nullis, cuticula substriolatim verrucosa. Amphigastria caulina saepe purpureo-tincta, magna, sinuatim inserta, adpressa, imbricata, ovato-oblonga, 0.8—0.9 mm longa, 0.5—0.6 mm lata, folio triplo minora, marginibus lateralibus fere substrictis, 1—4-spinosis vel paucidentatis, apice ad $1/4$ emarginato-bifida, lobis lanceolatis, 1—3-spinosis, spinis ipsis foliorum similis. Flora fem. terminalia; marsupia juvencula inflato-clavata, densissime echinata; folia floralia caulinis multo majora, falcato-oblonga, lobo antico lanceolato, ceterum caulinis simili; amphigastrium florale lanceolatum, foliis flor. subaequilongum, similiter armatum.

Specimens examined: North Borneo (Sabah), Mt. Kinabalu, between Kambaranga Radio Station and Waterfalls, 2000—2150 m alt., a thin layer of soil on shaded cliffs in forests, May 17, 1963, coll. M. Mizutani 2347-type (in herb. NICH 252347), —on shaded, moist soil, M.M. 2377, 2392, —on shaded cliff, M.M. 2365, 2503; —E. slope of Mt. Kinabalu, Hot Spring, Poring, 600—1100 m, vertical surface of rocks in shaded, moist places in forests, May 28, 1963, coll. M. Mizutani 3045. Borneo, Kalimantan, E. Katai, Peak of Balik Papan, terrace Berikan Balu, 800 m alt., dense forests along a brooklet under a waterfall, July 16, 1952, coll. W. Meijer B-2314. Philippines, Negros I., between Canlaon and campsite, Mt. Canlaon, 500—1700 m alt., on soil, May 26, 1965, coll. A.J. Sharp and Z. Iwatsuki 14540, 14541. All in herb. NICH.

subsp. **novoguineensis** Hatt. subsp. nov. (Fig. 2)

A typo recedit: foliis parum longioribus, margine densius spinosis, lobo antico cum 45—60 spinis marginalibus, lobo postico cum 30—35 spinis marginalibus, amphigastriis parum majoribus, circum-circa spinosis, spinis marginalibus 20—30 in toto.

Specim. exam.: New Guinea, Edie Creek, in the mountains above Wau, 7,000 ft., Jan. 1951, coll. A.A. Vogel, type in NICH; duplicate in S-PA.

N.B. Modes of branching in this species include both the terminal and the

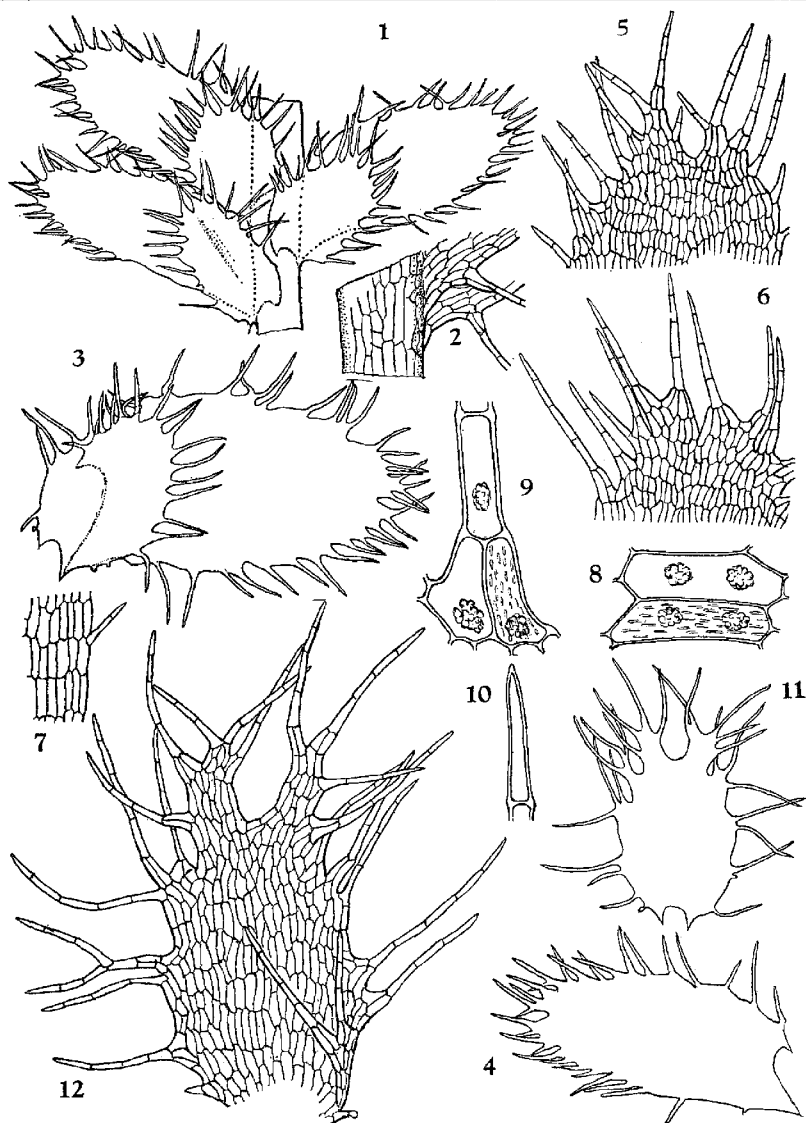


Fig. 2. *Balantiopsis ciliaris* subsp. *novoguineensis* Hatt. 1. Part of stem with 3 leaves, dorsal view, $\times 18$. 2. Part of stem, showing completely bilobed leaf-base, ventral view, $\times 45$. 3. Leaf, $\times 23$. 4. Do. lacking postical lobe, $\times 20$. 5. Apex of antical leaf-lobe, $\times 45$. 6. Apex of postical leaf-lobe, $\times 45$. 7. Antical margin of postical leaf-lobe with a tooth, $\times 55$. 8. Median cells of postical leaf-lobe, showing verrucose cuticle and oil-bodies, $\times 210$. 9. Base of marginal tooth of postical leaf-lobe, $\times 210$. 10. Apical cell of marginal tooth, $\times 210$. 11. Underleaf, $\times 23$. Drawn from the type of subsp. *novoguineensis*.

intercalary; the terminal branching is very rare, whereas the intercalary is easily seen in the basal portion of stem. In the cross-section of stem the cortical cells are smaller, thick-walled, and usually somewhat purplish, whereas the medullary cells are thin-walled and hyaline. The cortical cells are similar to those of the leaf in shape but a little longer ($100-200 \times 20-25 \mu$), and the cuticle is striolate-verrucose.

In both Bornean and Philippine materials the leaf-lobes occasionally appear to be joined at the base by a single (or rarely two) cells which, however, compose no true carina (see Fig. 1: 9). More or less decomposing oil-bodies were seen in some leaves of New Guinean material. They were spherical, composed of granules, two per cell (or often single in marginal cell and in the cell of marginal teeth), as shown in Fig. 2: 8.

References

- Hodgson, E.A. 1946. New Zealand Hepaticae (Liverworts), X-Marsupial genera of N. Z. Trans. Roy. Soc. N. Zealand 85: 565-584, Fig. 1~2. Inoue, H. 1965. A new species of *Balantiopsis* Mitt. from the Philippines. Jour. Jap. Bot. 40: 245-247, fig. 1.

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Balantiopsis 属は新熱帯に主として分布する属であるが、最近になって井上(1965)は本属の一種、*B. philippinensis* をフィリピンのネグロス島から記載した。フィリピンと既知の *Balantiopsis* の分布域の間には相当のへだたりがあるが、このギャップをうづめる種類がニューギニア、ボルネオ、フィリピンから発見された。ここに記載した *B. ciliaris* がそれである。これは葉が基部まで完全に二裂しており、接合部 (carina) がなくなっている点で、既知の *Balantiopsis* 属の種類と大変かけはなれている。このことを重視して、*B. ciliaris* を subg. *Schizophyllon* (subg. nov.) として、subg. *Balantiopsis* と区別することを提唱したい。

B. ciliaris がフィリピンからニューギニアにかけて分布していることは、これらの地域のフロラが本質的には同じものであることを示す一例になるではなかろうか。ニューギニア産のものはフィリピン、ボルネオ産のものに比べ、葉や腹葉のヘリの歯がいちじるしく多く、密になっている。他の形質には差がほとんどみられないし、フィリピン、ボルネオ産のものにはこのように密に歯をもつものがないので、一応 subspecies として区別しておきたい。